Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in this application:

Listing of Claims:

Claim 1 (Currently amended): A method for preparing a ~~biological~~ biologically compatible polymer scaffold for growing mammalian cells in situ when such scaffold is placed in a human which comprises:

(a) supplying a liquid solution ~~comprising~~ containing a biologically compatible polymer dissolved in said liquid to a liquid outlet placed in the vicinity of a surface, where said polymer is not electrically conductive; ~~and~~

(b) subjecting said ~~biologically compatible polymer~~ liquid solution supplied to said outlet and issuing from the outlet to an electric field to cause said liquid to form polymer fibres which ~~is~~ are attracted to and deposit~~s~~ onto the surface to form a polymer fibre scaffold ~~having a fibre diameter of from about 0.2 μm to about 100 μm and a fibre gap size of from 2.0 μm to about 500 μm;~~ comprising a three-dimensional continuous network of intercommunicating fibre portions with gaps between adjacent fibre portions, wherein said gaps are in the range of from about 2.0 μm to about 500 μm in size and wherein the diameter of the polymer fibres is from about 0.2 μm to about 100.0 μm; and

(c) applying mammalian cells to the fibre scaffold, wherein the mammalian cell diameter is from 5 to 10 times greater than the fibre diameter so as to facilitate at least one cell process~~es~~ selected from the group consisting of attachment, movement, growth, proliferation, and differentiation.

Claim 2 (Previously presented): The method according to claim 1, wherein the fibre diameter is comparable to or smaller than the cell diameter.

Claim 3 Cancelled.

Claim 4 (Cancelled)

Claim 5 (Previously presented): The method according to claim 1, wherein the cell diameter is in the range from about 2 to about 20 microns and the fibre diameter is in the range from about 1 to 2 microns.

Claim 6 (Previously presented): The method according to claim 1, wherein the cell diameter is about 10 microns and the fibre diameter is from 1 to 2 microns.

Claim 7 (Previously presented): The method according to claim 1, wherein the fibre diameter is from 1 to 2 microns.

Claim 8 (Previously presented): The method according to claim 1, wherein the relative sizes of the cell and fibre diameters are such that the fibre surface appears curved to the cells.

Claim 9 (Previously presented): The method according to claim 1, wherein the fibre diameter is of comparable size to cell surface receptors of the cells.

Claim 10 (Currently amended): The method according to claim 1, wherein the polymer is selected from the group consisting of polylactide ~~(~~L:D isomer ratio 50:50)~~,~~ and polylactide (L:D isomer ratio 96:4).

Claim 11 (Previously presented): The method according to claim 1, wherein the cells are human adherent cells.

Claim 12 (Previously presented): The method according to claim 1, wherein the cells are human fibroblast cells.

Claim 13 (Currently amended): The method according to claim 1 wherein the mammalian cells include human fibroblast cells, and the polymer fibre scaffold has a fibre diameter in the range of 1 to 2 microns with gaps between adjacent fibre portions, wherein said gap size is from about 50 microns to about 200 microns.

Claim 14 (Currently amended): A method for preparing a biologically compatible polymer scaffold for growing human fibroblast cells in situ when such scaffold is placed in a human which comprises:

(a) supplying a liquid solution ~~comprising~~ containing a biologically compatible polymer dissolved in said liquid to a liquid outlet in the vicinity of a surface, where said polymer is not electrically conductive;

(b) subjecting the liquid solution ~~biologically compatible polymer liquid~~ supplied to said outlet and issuing from the outlet to an electric field to cause the liquid solution to form ~~a~~ polymer fibres which are ~~is~~ attracted to and deposits onto said surface to form a polymer fibre scaffold comprising a three-dimensional continuous network of intercommunicating fibre portions with gaps between adjacent fibre portions, wherein said gaps are ~~being~~ in the range of from about 10 µm to about 500 µm in size and wherein the diameter of the polymer fibres is from about 1.0 µm to about 2.0 µm; and

(c) applying the human fibroblast cells to the fibre scaffold~~;~~ , wherein said human fibroblast cells grow or elongate preferentially along the fibres of the fibre scaffold~~;~~.

Claim 15 (Previously presented): The method according to claim 20, wherein the mammalian cells comprise human bone marrow fibroblast cells, and wherein the mean fibre

diameter of fibres in the polymer fibre scaffold is about 3 microns with the mean size of gaps between adjacent fibre portions of about 16 microns.

Claim 16 (Currently amended): A method for preparing a ~~biological~~ biologically compatible polymer scaffold for facilitating differentiation of stem cells in situ when such scaffold is placed in a human which comprises: supplying a liquid solution containing ~~comprising~~ a biologically compatible polymer dissolved in said liquid to a liquid outlet placed in the vicinity of a surface, where said polymer is not electrically conductive; subjecting said biologically compatible polymer liquid supplied to said outlet and issuing from the outlet to an electric field to cause the liquid to form polymer fibres which ~~is~~ are attracted to and deposit~~s~~ onto the substrate to form a polymer fibre scaffold comprising a three-dimensional continuous network of intercommunicating fibre portions; wherein the ~~fiber~~ fibre diameter is about 25 μm and the gap size is from about 150 μm to about 200 μm; and applying said stem cells to said polymer fibre scaffold without addition of extrinsic biological factors.

Claim 17 (Cancelled)

Claim 18 (Currently amended): A method for preparing a biologically compatible polymer scaffold for facilitating differentiation of human bone marrow fibroblastic cells in situ when such scaffold is placed in a human which comprises: ~~A method of facilitating differentiation of osteogenic stem cells, which method comprises:~~

(a) supplying a liquid solution of ~~comprising~~ a biologically compatible polymer dissolved in said liquid to a liquid outlet placed in the vicinity of a surface, wherein said polymer is not electrically conductive; ~~and~~

(b) subjecting said ~~biologically compatible polymer~~ liquid solution supplied to said outlet and issuing from the outlet to an electric field to cause the liquid solution to form polymer fibres which are attracted to and deposit onto the ~~substrate~~ surface to form a polymer fibre

scaffold comprising a three-dimensional continuous network of intercommunicating fibre portions~~, wherein the method further comprising selecting a the fibre portions have a fibre diameter of diameter of about 310 microns and selecting gaps a gap between adjacent fibre portions of about 16 microns;~~ with gaps between adjacent fibre portions, wherein said gaps are in about 16 µm in size and wherein the diameter of the polymer fibres is about 310 µm; and

(c) applying the cells to the fibre scaffold without addition of extrinsic biological factors wherein, ~~the selecting of the fibre diameter and gaps resulting~~ after a period of time, ~~in~~ the resulting human bone marrow fibroblastic cells ~~having~~ have a morphology resembling nerve cells.

Claim 19 (Previously presented): The method according to claim 16, wherein the polymer comprises polycaprolactone.

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Claim 20 (Currently amended): A method for preparing a biological compatible polymer scaffold for growing mammalian cells in situ when such scaffold is placed in a human which comprises:

(a) supplying a liquid solution ~~comprising a solution of~~ containing a biologically compatible polymer dissolved therein to a liquid outlet in the vicinity of a surface, where said polymer is not electrically conductive; ~~and~~

(b) subjecting said ~~biologically compatible polymer~~ liquid solution supplied to said outlet and issuing from the outlet to an electric field to cause the liquid to form polymer fibres which are ~~is~~ attracted to and deposits onto the ~~substrate~~ surface to form a polymer fibre scaffold comprising a three-dimensional continuous network of intercommunicating fibre portions, wherein said gaps are in the range of from about 10.0 µm to about 500 µm in size and wherein the diameter of the polymer fibres is from about 0.2 µm to about 100.0 µm ~~µm ; microns and a gap size of from about 10 µm to about 500 µm~~; and

(c) applying mammalian cells to the fibre scaffold, ~~the and selecting the fibre diameter and gap size~~ to facilitate ~~facilitating~~ at least one cell process selected from the group consisting of growth preferentially along the fibre portions, attachment to the fibre portions, elongation preferentially along the fibre portions, and differentiation.

Claim 21 (Cancelled)

Claim 22 (Cancelled)

Claim 23 (Cancelled)

Claim 24 (Cancelled)

Claim 25 (Currently amended): The method according to claim 54 ~~24~~, wherein the fibre scaffold is arranged to be implanted in a mammalian body or placed on or in a wound.

Claim 26 (Currently amended): The method according to claim 54 ~~24~~, wherein the surface is a target area of a mammalian body ~~such as a wound~~ and the fibre scaffold is produced in situ.

Claim 27 (Currently amended): The method according to claim 1, wherein the cells are applied by a seeding process.

Claim 28 (Currently amended): The method according to claim 1, wherein the cells are applied to said polymer scaffold by spraying.

Claim 29 (Currently amended): The method according to claim 1, ~~which comprises preparing a liquid formulation suitable for enabling cells to be applied to the fibre scaffold by subjecting the liquid formulation to an electric field to cause the liquid to break up into droplets, which comprises formulating cell culture medium with a water soluble polymer.~~ wherein said liquid solution consists essentially of cell culture medium in which said biologically compatible polymer dissolved.

Claim 30 (Currently amended): The method according to claim 28 ~~1~~, ~~which comprises applying the~~ wherein said mammalian cells are added to said liquid solution prior to the liquid solution being supplied to said outlet. ~~cells to the fibre scaffold by subjecting a liquid formulation comprising cell culture medium carrying the cells and a water soluble polymer to an electric field to cause the liquid to break up into droplets or to form at least one fibre.~~

Claims 31 – 34 (Cancelled)

Claim 35 (Currently amended): The method according to claim 1, wherein the fibre gap is greater than approximately half the mammalian cell diameter.

Claim 36 ~~35~~ (Currently amended): The method according to claim 1, wherein the fibre diameter is less than the fibre gap.

Claims 37-48 (Cancelled)

Claim 49 (Previously presented): The method according to claim 1, wherein the surface is a target area of a mammalian body ~~such as a wound~~ and the fibre scaffold is produced in situ.

Claim 50 (Currently amended): The method according to claim 16, wherein the cells are applied by a seeding process.

Claim 51(Currently amended): The method according to claim 16, wherein the cells are applied by spraying.

Claim 52 (Previously presented): The method according to claim 26, wherein the target area is a wound.

Claim 53 (Previously presented): The method according to claim 49, wherein the target area is a wound.

Claim 54 (New): A method for preparing a biologically compatible polymer scaffold for growing mammalian cells in situ when such scaffold is placed in a mammal which comprises:

(a) supplying a polymer melt consisting essentially of a biologically compatible polymer which is not electrically conductive to a liquid outlet placed in the vicinity of a surface, wherein the liquid outlet is kept at the temperature of the melt;

(b) subjecting said polymer melt supplied to said outlet and issuing from the outlet to an electric field to cause said polymer melt to form polymer fibres which are attracted to and deposit onto the surface to form a polymer fibre scaffold comprising a three-dimensional continuous network of intercommunicating fibre portions with gaps between adjacent fibre portions, wherein said gaps are in the range of from about 25 μm to about 3000 μm in size and wherein the diameter of the polymer fibres is from about 2 μm to about 500 μm; and

(c) applying mammalian cells to the fibre scaffold, wherein the mammalian cell diameter is from 5 to 10 times greater than the fibre diameter so as to facilitate at least one cell process selected from the group consisting of attachment, movement, growth, proliferation, and differentiation.

Claim 55 (New): The method according to claim 1, wherein the liquid is selected from the group consisting of water, acetone, ethanol, and cell culture medium.

Claim 56 (New): The method according to claim 55, wherein said cell culture medium is DMEM.